

NOTES ON THE GENUS DISCUS

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DISCUS CATSKILLENSIS (Pilsbry).

Pyramidula striatella catskillensis Pilsbry. 1898. *Nautilus* 12: 89.

Discus cronkhitei catskillensis (Pilsbry). Pilsbry, 1948. *Land Moll. N. Amer.* 2: 605.

Discus catskillensis differs from *D. cronkhitei* (Newcomb) in the distinctly angular periphery of the shell, the larger umbilicus, and in the lighter colored animal. The animal of *D. cronkhitei* is dark gray, while the animal of *D. catskillensis* is nearly white. *D. cronkhitei* is a species of low, wet places; while *D. catskillensis* is usually found in upland woods, but it does occur in low, wet places as well. In the latter habitat, it is sometimes found in company with *D. cronkhitei*. Where they occur together the two species are readily separable. I have seen no evidence of hybridization. The two species have been found living together in northern New York, Michigan, and West Virginia. They also occur together as Pleistocene fossils in the loess at New Harmony, Indiana.

DISCUS PATULUS PATULUS (Deshayes).

Helix patula Deshayes. 1830. *Encycl. Méth.* 2: 217.

Gonyodiscus bryantwalkeri Pilsbry. 1924. *Proc. Acad. Nat. Sci. Phila.* 76: 420.

Discus bryantwalkeri (Pilsbry). Pilsbry, 1948. *Land Moll. N. Amer.* 2: 611.

Discus patulus brooksi Kutchka. 1938. *Nautilus* 52: 13.

Discus patulus angulatus Kutchka. 1938. *Nautilus* 52: 13. Not *D. macclintocki angulatus* (F. C. Baker), 1928.

Discus patulus carinatus MacMillan. 1940. *Nautilus* 53: 143. Not *Helix (Patula) perspectiva* variety *carinata* Gratacap, 1901.

Discus patulus is an extremely variable species, differing in size and number of radial striae, in the elevation of the spire, and in the angulation of the periphery. This variation reaches its peak in eastern Tennessee and northern Alabama. Much of it appears to be due to introgression from *D. nigrimontanus*. I have collected several lots from what appear to be hybrid populations. The primary isolating mechanism between these two species is an ecological one. *D. patulus* is usually found on or about logs and in deep leaves, while *D. nigrimontanus* is a species of rocky places with sparse leaf cover. Hybridization apparently occurs

when a log falls across a rocky place.

At high altitudes in the mountains of western North Carolina, *D. patulus* has much smaller and closer radial ribs. Such specimens resemble *D. bryantwalkeri* except that they have an internal tubercle. Since the type of *D. bryantwalkeri* has a little less than 5 whorls it seems to be only a slightly immature specimen of this high altitude form of *D. patulus*.

D. patulus brooksi with coarse radial ribs, and *D. patulus "carinatus"* with an angular periphery, are forms with some *D. nigrimontanus* admixture. Since they rarely occur in pure colonies and are found sporadically in or near the range of *D. nigrimontanus*, they do not seem worthy of recognition.

DISCUS PATULUS EDENTULUS, new subspecies.

Discus patulus form *edentulus* Pilsbry. 1948. Land Moll. N. Amer. 2: 610, fig. 330c.

Differs from *D. patulus patulus* in having more slender, more loosely coiled whorls, and a larger umbilicus. Usually edentate but often with a small tubercle within the aperture.

This is the form of the Ozark region, which also occurs in Cheatam County, Tennessee.

Pilsbry's form *edentulus* was based on the absence of the internal tubercle, a character of little value. However, the other characters given above were found to be constant in all material from the mountains of western Arkansas and southwestern Missouri.

DISCUS NIGRIMONTANUS (Pilsbry).

Gonyodiscus bryanti nigrimontanus Pilsbry. 1924. Proc. Acad. Nat. Sci. Phila. 76: 419.

Discus bryanti tuberculatus Kutchka. 1938 Nautilus 52: 14.

Discus bryanti nigrimontanus (Pilsbry). Pilsbry. 1948. Land Moll. N. Amer. 2: 613.

Discus bryanti form *tuberculatus* Kutchka. Pilsbry. 1948. Land Moll. N. Amer. II, 614.

I have seen no intergradation between *D. nigrimontanus* and *D. bryanti*. *D. nigrimontanus* seems more closely related to *D. patulus*.

Discus bryanti tuberculatus is based upon shells with an internal tubercle, but some shells in the type lot of *D. nigrimontanus* also have an internal tubercle. Some admixture with *D. patulus* greatly increases the percentage of shells with the internal tubercle.